

MDX Queries

Business Goals

This data warehouse project focuses on **sales performance analysis** of a DVD rental business:

1. Boost Revenue Through Sales Insights

- Analyze total revenue generated from rentals, late fees, and payments across time.
- Compare film categories and individual titles to determine high-performing genres.
- Understand store-wise and region-wise sales performance.

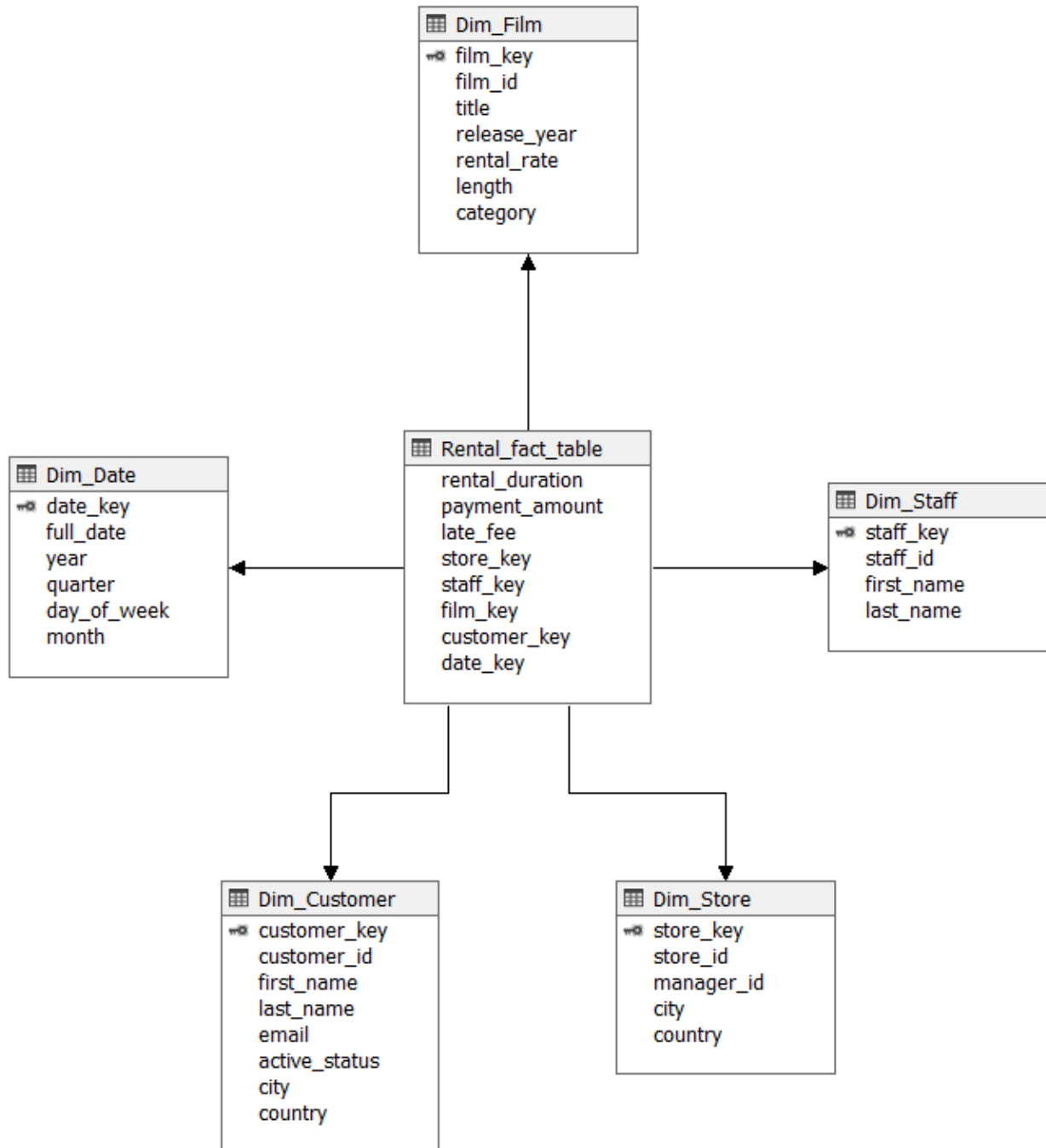
2. Identify High-Value Customers

- Track customer purchase behavior based on payment amounts and frequency.
- Segment customers into tiers based on spending to offer targeted promotions.

3. Uncover Seasonal Trends in Sales

- Use date-based insights to analyze monthly, quarterly, and yearly sales trends.
- Prepare for peak seasons and allocate resources accordingly.

Star Schema



1. Boost Revenue Through Sales Insights

Total Revenue

```
SELECT
  [Measures].[payment amount] ON COLUMNS,
  [Dim Date].[year].[All] ON ROWS
FROM [Sakila Data Warehouse]
```

	Payment Amount
All	67406.5599999916

Total Revenue from Rentals, Late Fees, and Payments over Time (sorted descending)

```
SELECT
  {[Measures].[payment amount], [Measures].[late fee]} ON COLUMNS,
  ORDER([Dim Date].[year].Children, [Measures].[payment amount], BDESC) ON ROWS
FROM [Sakila Data Warehouse]
```

	Payment Amount	Late Fee
2005	66892.3799999915	8278.60000000022
2006	514.180000000001	0

Top 10 Film Categories by Revenue

SELECT

{[Measures].[payment amount]} ON COLUMNS,

HEAD(

ORDER([Dim Film].[category].Children, [Measures].[payment amount], BDESC),

10) ON ROWS

FROM [Sakila Data Warehouse]

	Payment Amount
Sports	5314.209999999985
Sci-Fi	4756.979999999987
Animation	4656.299999999986
Drama	4587.389999999987
Comedy	4383.579999999989
Action	4375.849999999987
New	4351.619999999999
Games	4281.329999999989
Foreign	4270.669999999989
Family	4226.069999999988

Top 10 Films by Revenue

SELECT

{[Measures].[payment amount]} ON COLUMNS,

HEAD(

ORDER([Dim Film].[title].Children, [Measures].[payment amount], BDESC),

10) ON ROWS

FROM [Sakila Data Warehouse]

	Payment Amount
TELEGRAPH VOYAGE	231.73
WIFE TURN	223.69
ZORRO ARK	214.69
GOODFELLAS SALUTE	209.69
SATURDAY LAMBS	204.72
TITANS JERK	201.71
TORQUE BOUND	198.72
HARRY IDAHO	195.7
INNOCENT USUAL	191.74
HUSTLER PARTY	190.78

Top 10 Stores by Revenue (including City)

SELECT

{[Measures].[payment amount]} ON COLUMNS,

HEAD(

ORDER(

NONEMPTY([Dim Store].[store key].Children, [Measures].[payment amount]),

[Measures].[payment amount], BDESC

),

10) ON ROWS

FROM [Sakila Data Warehouse]

	Payment Amount
1	33726.77000000051
2	33679.79000000049

2. Identify High-Value Customers

Top 10 Customers by Spending

SELECT

{[Measures].[payment amount]} ON COLUMNS,

HEAD(

ORDER([Dim Customer].[First Name].Children, [Measures].[payment amount],
BDESC),

10) ON ROWS

FROM [Sakila Data Warehouse]

	Payment Amount
MARION	310.32
TRACY	262.42
JAMIE	258.46
LESLIE	242.43
JESSIE	233.41
KARL	221.55
ELEANOR	216.54
KELLY	203.53
WILLIE	203.49
TERRY	200.51

3. Uncover Seasonal Trends in Sales

Monthly Sales

```
SELECT
    [Measures].[payment amount] ON COLUMNS,
    NON EMPTY ORDER([Dim Date].[month].Children, [Measures].[payment amount],
DESC) ON ROWS
FROM [Sakila Data Warehouse]
```

	Payment Amount
7	28368.91000000037
8	24070.14000000022
6	9629.889999999961
5	4823.439999999986
2	514.1800000000001

Quarterly Sales

```
SELECT
    [Measures].[payment amount] ON COLUMNS,
    NON EMPTY ORDER([Dim Date].[quarter].Children, [Measures].[payment amount],
DESC) ON ROWS
FROM [Sakila Data Warehouse]
```

	Payment Amount
3	52439.04999999996
2	14453.33
1	514.1800000000001

Yearly Sales

SELECT

[Measures].[payment amount] ON COLUMNS,

NON EMPTY ORDER([Dim Date].[year].Children, [Measures].[payment amount],
DESC) ON ROWS

FROM [Sakila Data Warehouse]

	Payment Amount
2005	66892.3799999915
2006	514.180000000001

Combined Time Hierarchies

SELECT

[Measures].[payment amount] ON COLUMNS,

NON EMPTY

ORDER(

([Dim Date].[year].Children * [Dim Date].[quarter].Children * [Dim
Date].[month].Children),

[Measures].[payment amount],

DESC

) ON ROWS

FROM [Sakila Data Warehouse]

			Payment Amount
2005	2	6	9629.890000000002
2005	2	5	4823.440000000001
2005	3	7	28368.909999999999
2005	3	8	24070.13999999997
2006	1	2	514.180000000001